16

Claims

1.   An optical network element for use in an optical network, the network element including a processing unit capable of running a Unix® operating system and adapted, in use, to effect at least one management function associated with the network element.

2.   An optical network element as claimed in claim 1, wherein the management function comprises the distribution of one or more of the group of alarm reports, audit logs, alarm logs, status reports and control messages.

3.   An optical network element as claimed in claim 1, wherein the processing unit includes a mass storage device for storing the Unix® operating system and associated files and utilities.

4.   An optical network element as claimed in claim 3, further including one or more network management application programs, protocol implementations and kernel modules adapted to operate on the Unix® operating system.

5.   An optical network element as claimed in claim 4, wherein the application programs comprises one or more of the group of an electronic mail application, and a web server application.

6.   An optical network element as claimed in claim 4, wherein the protocol implementations comprise one or more of the group of a Common Object Request Broker Architecture (CORBA) implementation, a Simple Network Management Protocol (SNMP) implementation, a Multi-Protocol Label Switching (MPLS) implementation and a Multi-Protocol *Lambda* Switching (MPλS) implementation.

7.   An optical network element as claimed in claim 4, wherein the kernel modules comprise Internet firewall kernel modules.

8.   An optical network element as claimed in claim 1, wherein the processing unit further includes an interface to a system interconnect bus within the network element, via which it is able to obtain real-time information regarding the components comprising the network element for distribution in alarm reports, audit logs, alarm logs and status reports, and via which it is also able to control the operation of the components comprising the network element in accordance with control messages received.

9.   An optical network element as claimed in claim 1, wherein the processing unit further includes an interface to external network operator and/or network subscriber networks, via which network operators and/or subscribers are able to monitor alarm reports, audit logs, alarm logs and status reports, and via which network operators and/or subscribers are able to issue control messages.

10.   An optical network element as claimed in claim 1, wherein the network element comprises a network node or an in-line amplifier.

11.   An optical network including a plurality of network elements, each network element including a processing unit capable of running a Unix® operating system and adapted, in use, to effect at least one management function associated with the network element.

12.   An optical network as claimed in claim 11, wherein the management function comprises the distribution of one or more of the group of alarm reports, audit logs, alarm logs, status reports and control messages.

13.   A method of managing an optical network, the method comprising transmitting management data directly between processing units located at individual network elements of the optical network, wherein the management data is processed within each processing unit on a Unix® operating system.

14.   A method as claimed in claim 13, wherein the management data comprises data associated with alarm reports, audit logs, alarm logs, status reports and control messages.

15.   A method as claimed in claim 13, wherein the management data is processed utilising one or more network management application programs, protocol implementations and kernel modules adapted to operate on the Unix® operating system.

16.   A method as claimed in claim 14, wherein the application programs comprise one or more of the group of an electronic mail application, and a web server application.

17.   A method as claimed in claim 14, wherein the protocol implementations comprises one or more of the group of an SSH implementation, a CORBA implementation, an SNMP implementation, an MPLS implementation and an MPλS implementation.

18.   A method as claimed in claim 14, wherein the kernel modules comprises Internet firewall kernel modules.